

Claims:

1. A method of determining a physical property of a log or similar wood member which comprises:
 - projecting a small amount of a liquid or solid against the end of the log
 - 5 with sufficient energy to initiate a stress wave;
 - measuring the time of travel of the stress wave in the log; and
 - relating the time of stress wave travel to a physical property of the log.
2. The method of claim 1 in which a pulse of liquid under high pressure is
 - 10 projected to initiate the stress wave
3. The method of claim 2 in which the liquid is water.
4. The method of claim 2 in which the liquid in the liquid pulse has a
 - 15 weight no greater than about 50g.
5. The method of claim 3 in which the water includes a surfactant.
6. The method of claim 1 in which a solid pellet is projected against the
 - 20 end of the log.
7. The method of claim 6 in which the pellet is ice.
8. The method of claim 6 in which the solid pellet has a weight no greater
 - 25 than about 10g.
9. The method of claim 1 in which the time of travel of the stress wave is measured by an accelerometer in contact with the log.
10. The method of claim 1 in which the time of travel of the stress wave
 - 30 is measured by a non-contact laser Doppler vibrometer.
11. The method of claim 1 in which the physical property measured is modulus of elasticity.

12. The method of claim 11 in which the modulus of elasticity is used in a cutting optimizer program to determine optimum breakdown of the log.